

### REMARKS

In the office action, Figure 1 was objected to. Figure 1 has been amended as suggested by the Examiner and a new formal drawing sheet containing Figure 1 is also enclosed. Claim 1 was provisionally rejected under obviousness-type double patenting in view of claim 19 of co-pending application number 09/814,346 and claim 1 of copending patent application no. 10/077,527. If the Examiner otherwise deems the claims allowable, Applicants are willing to submit a Terminal Disclaimer to overcome that rejection.<sup>1</sup> The office action also rejected claims 1-16 under 35 U.S.C. §103(a) as being unpatentable over "Joint Detection with Low Computational Complexity for Hybrid TD-CDMA Systems" by Benvenuto et al. and U.S. Patent No. 5,718,899 (Thielecke et al.). Applicants respectfully traverse this rejection based on the following.

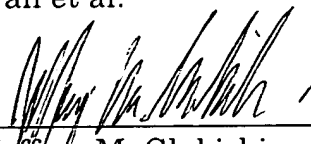
Benvenuto discloses a joint detection system. Benvenuto uses a model that is based on chip rate sampling. See "at chip interval  $T_c$ " on page 619, left column four lines from the bottom. Please note the present invention uses multiple chip rate sampling. Furthermore, Benvenuto is also modeled using the A matrix which is disclosed in Equation 5 on page 619 as being the convolution of each users impulse response by the users specific signature sequences "codes". This A matrix, which is the convolution of the impulse responses and signature sequences is then partitioned into  $U^2$  squared Toeplitz matrices as described at the bottom of the left column on page 620. A circulant approximation of these partitioned matrices are

used in the data detection. The present invention uses a totally different approach. The present invention uses the channel response matrix, which does not have any of the user signature sequences or codes. Accordingly, using the channel response matrix in and of itself distinguishes the invention from Benvenuto. Additionally, a circulant version of the channel response matrix is used, which is not taught at all or suggested in Benvenuto. Accordingly, the present invention is clearly distinguished from that disclosed and patentable. Furthermore, the invention uses multiple chip rate sampling, which further complicates the receiver mode structure by having multiple sample streams and multiple channel response matrices being combined as shown as Equation 14 and Equation 15 on page 10 of the present specification.

Reconsideration and entry of this amendment is respectfully requested.

Respectfully submitted,

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